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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,926	11/06/2000	Rajashri Joshi	N0069US	8587

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NAVIGATION TEC. CORP.
PATENT DEPARTMENT
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EXAMINER	
LE, MIRANDA	
ART UNIT	**PAPER NUMBER**
2177	11

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/706,926	FRANK J. KO ZAK	
	Examiner	Art Unit	
	Miranda Le	2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment , filed 12/28/2003.

2. Claims 1-27 are pending in this application. Claims 1, 8, 11, 13, 16, 20, 24 are independent claims. In the Amendment B, no claims has been added, cancelled or amended. This action is made Final.

3. The objection to the specification (claim objection) of the invention has been withdrawn in view of the amendment.

Drawings

4. The drawings submitted 11/06/2000 have been objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons submitted in Form PTO 948.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 5, 7-8, 11, 13, 16, 18, 20-22, 24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (US Patent No 5,544,052).

Fujita anticipated independent claims 1, 8, 11, 13, 16, 20, 24 by the following:

As per claim 1, Fujita teaches "a method for representing cartographic data in a computer-based system... computing a plurality of wavelet and scaling coefficients corresponding to at least one function representing a geographic feature in a cartographic database" at col. 6, lines 8-49, col. 8, lines 1-39, col. 8, line 55 to col. 9, line 12, col. 10, lines 34-46, col. 18, lines 4-8, col. 18, line 47 to col. 19, line 8;

"storing the wavelet and scaling coefficients in a computer-usable database, the coefficients being usable for representing the cartographic data in the computer-based system" at col. 4, lines 9-51, col. 6, lines 36-49, col. 12, lines 7-16, col. 12, lines 17-57, Fig. 3 (Graphic Data 313).

As to claims 8, 11, Fujita teaches "a method of displaying on a computer output device a function representing a geographic feature...retrieving from a computer-usable database a plurality of wavelet and scaling coefficients associated with the geographic feature, the coefficients being derived from a plurality of data points specifying geographic locations according to a predetermined reference system" at col. 6, lines 8-49, col. 8, lines 1-39, col. 10, lines 34-46;

"computing the function representing the geographic feature using the retrieved wavelet and scaling coefficients" at col. 6, lines 8-49, col. 8, lines 1-39, col. 8, line 55 to col. 9, line 12, col. 10, lines 34-46, col. 18, lines 4-8, col. 18, line 47 to col. 19, line 8;

"displaying the function on the computer output device" at col. 6, line 51 to col. 7, line 16.

As to claims 13, 16, Fujita teaches "a method of generating a computer-usable database that represents cartographic data using a plurality of wavelet and scaling coefficients...providing a predetermined database that represents the cartographic data using a plurality of data points specifying geographic locations" at col. 6, lines 36-49, col. 12, lines 7-16, col. 4, lines 9-51, Fig. 1 (Database 105), Fig. 3 (Graphic Data 313);

"computing a plurality of wavelet and scaling coefficients from the data points, wherein said wavelet and scaling coefficients are used to represent the cartographic data" at col. 6, lines 8-49, col. 8, lines 1-39, col. 8, line 55 to col. 9, line 12, col. 10, lines 34-46, col. 18, lines 4-8, col. 18, line 47 to col. 19, line 8;

"storing the wavelet and scaling coefficients in the computer-usable database" at col. 6, lines 36-49, col. 12, lines 7-16, col. 4, lines 9-51, Fig. 3 (Graphic Data 313).

As to claims 20, 24, Fujita teaches "a method for generating a database error metric ...computing a first plurality of wavelet and scaling coefficients from a plurality of first data points included in a first cartographic database, wherein said wavelet and scaling coefficients represent geographic features" at col. 4, line 60 to col. 5, line 8, Fig. 1 (Database 105)

"computing a second plurality of wavelet and scaling coefficients from a plurality of data points included in a second cartographic database, wherein said wavelet and scaling coefficients represent geographic features" at col. 12, lines 17-57, Fig. 3 (Graphic Data 313);

"generating the database error metric based on a wavelet transform involving the first and second pluralities of wavelet coefficients" at col. 4, line 60 to col. 5, line 8, col. 12, lines 17-57, col. 17, line 56 to col. 18, line 8.

As per claim 2, Fujita teaches "the geographic feature is originally represented by a plurality of data points" at col. 10, lines 15-33, Figs. 12A-12B.

As per claim 5, Fujita teaches "the step of computing the wavelet coefficients and scaling coefficients includes applying a wavelet transform to a function defined by the data points representing the geographic feature" at col. 10, lines 15-33, col. 6, lines 8-34, col. 6, lines 36-51.

As per claim 7, Fujita teaches "the wavelet and scaling coefficients are computed using a semi-discrete orthonormal wavelet transform" at col. 19, lines 16-41.

As per claim 18, Fujita teaches "the wavelet coefficients and scaling coefficients are computed by applying a wavelet transform to a function defined by the data points representing a geographic feature" at col. 10, lines 15-33, Figs. 12A-12B.

As per claim 21, Fujita teaches "the error metric is a total error metric based on a plurality of wavelet scales" at col. 17, line 56 to col. 18, line 8.

As to claims 22, 26, Fujita teaches "selecting a wavelet scale; and restricting the error computation to the selected wavelet scale to generate a layer error metric" at col. 17, line 56 to col. 18, line 8.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 3-4, 9-10, 12, 14-15, 17, 23, 25, 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (US Patent No 5,544,052), in view of Feigenbaum et al. (US Patent No. 5,737,508).

As to claims 3, 9, 12, 14, 17, 23, 27, Fujita teaches "the data points are selected from the group consisting of coordinate pairs" at col. 14, lines 31-54.

Fujita does not explicitly teach "a coordinate triples". However, Feigenbaum teaches this limitation at col. 17, line 54 to col. 18, line 18.

Thus, it would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the teachings of Fujita with the teachings of Feigenbaum to include "the data points are selected from the group consisting of a coordinate triples" in order to position objects on a surface or in a space in accordance with particular predetermined relationships with each other.

As to claims 4, 10, 15, Fujita does not expressly teach "the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad, track, and airport". However, Feigenbaum teaches this limitation at col. 3, lines 29-36, col. 3, line 66 to col. 4, line 15.

Thus, it would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the teachings of Fujita with the teachings of Feigenbaum to include "the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad track, and airport" in order to provide a method for optimally typeface representing names of places or other cartographic features on a map.

As per claim 25, Fujita teaches "the error metric is a total error metric based on a plurality of wavelet scales" at col. 17, line 56 to col. 18, line 8.

9. Claims 6, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (US Patent No 5,544,052), in view of Davision et al. (US Patent No. 6,516,099 B1).

As to claims 6, 19, Fujita does not explicitly teach "the step of computing the wavelet coefficients and scaling coefficients includes: computing the wavelet coefficients by performing a least-squares fit". However, Davision teaches this limitation at col. 20, lines 5-25.

Thus, it would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the teachings of Fujita with the teachings of Davision to include "the step of computing the wavelet coefficients and scaling coefficients includes: computing the wavelet coefficients by performing a least-squares fit" in order to consider pixels within a surrounding

area of the identified point in the second image and to produce a value indicating the degree of similarity between the point in the first image and the best matching point in the area in the second image.

Response to Arguments

10. Applicant's arguments filed 12/28/2003 have been fully considered but they are not persuasive.

Applicant argues that:

(a) Fujita does not anticipate any of the independent claims 1, 8, 11, 13, 16, 20, 24 because Fujita fails to disclose "plurality of wavelet and scaling coefficients".

(b) Feigenbaum does not disclose/suggest wavelet coefficients used with coordinate triples, coordinate pairs or boundaries of the geographic features or cartographic data.

(c) Davidson fails to disclose "wavelet coefficients".

The Examiner respectfully disagrees for the following reasons:

Per (a), with regards to claims 1, 8, 11, 13, 16, 20, 24, Fujita teaches "plurality of wavelet and scaling coefficients" as "both a coefficient of a coordinate transformation formula and precision in the transformation are determined from this region of interest" (col. 6, lines 48-50), and "reference numeral 409 represents a display *scaling* program for executing a scaling operation when transformation graphic data is displayed, reference numeral 410 is a *precision* evaluating program for transformation" (col. 8, lines 28-36).

Note that pursuant to Specification, page 4, lines 1-2, "A wavelet representation of cartographic data can provide an accurate representation of the data, similarly, Fujita discloses "the precision coefficient" which corresponds to "the wavelet coefficient".

Furthermore, Fujita teaches *a digital cartographic system for processing geographic information* (Abstract), Fujita also teaches the scaling coefficient in the transformation as "At a step 513, an enlargement ratio (reduction ratio) (i.e. scaling) for display purpose is determined (col. 10, lines 34-35), and "the enlargement (reduction) ratio is determined in such a manner that the longer side of the rectangle can be stored within the display region. This ratio will be referred by the display scaling program (col. 10, lines 43-46).

Fujita teaches the wavelet coefficient at col. 18, lines 18-22, that is, "At a step 1401, an allowable range for a position shift amount of graphic is determined. This allowable range of the shift amount (precision in transformation) is determined in accordance with an area of a region of interest".

It is clearly shown that Fujita teaches "plurality of wavelet and scaling coefficients". Therefore, Fujita does disclose each and every element recited in Applicant's claims 1, 8, 11, 13, 16, 20, 24. The claim language as presented is still read on by the Fujita reference at the cited paragraph in the claim rejections.

Per (b), Fergenbaun teaches "an improved method for smoothing of line work on a surface, such as map in order to optimally generalize line work such as coastline or rivers when it is desired to prepare a smaller scale version of the map. In such smaller scale versions detailed characteristics of lines are successively eliminated as the scale of the depiction becomes smaller.

Such smoothing must be accomplished, however, without losing the essential characteristics of the line work at the particular scale" (col. 16, lines 16-25).

In accordance with Applicant's Specification on page 5, lines 9-12, "the wavelet representation of geographic features yields accurate results, and can also be made more accurate by using smoother basis function", similarly, Feigenbaum is directed to a method for optimally placing typeface representing names of places or other *cartographic feature* on the *map* (col. 2, line 67 to col. 3, line 1), such as rivers or national parks (col. 3, line 31).

Both Fujita and Feigenbaum teach the same field as representing a cartographic data in a computer system. Although Fujita teaches a wavelet and scale coefficient (i.e. smoothing) at a particular scale (col. 16, lines 16-25), Fujita does not expressly teach "the data points are selected from the group consisting of coordinate triple, the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad, track, and airport", Feigenbaum teaches this limitation at col. 17, lines 54-59, col. 5, lines 56-59, col. 12, lines 17-21. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ the wavelet coefficients used with coordinate triples, coordinate pairs or boundaries of the geographic features or cartographic data as taught by Feigenbaum to the system of Fujita in order to provide an improved method for smoothing lines as the scale of the surface decreases, while maintaining the essential characteristics of such lines (col. 2, lines 15-18).

As pointed out by the Examiner, only the teaching of "the data point are selected from the group consisting of coordinate triple, the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad, track, and airport"

being taught by Feigenbaum is used in combining with the system of Fujita to render obvious the claimed limitations.

Therefore, the claimed invention as represented in the claims does not represent a patentable over the art of record.

Per (c), the Applicants' argument is not persuasive under the same rationale given above to argument (b). As discussed, Fujita teaches computing the wavelet coefficient and scaling coefficients, but does not specifically teach performing a least-square fit. However, Davidson teaches this limitation at col. 20, lines 29-33, and col. 19, lines 18-21. Since both Fujita and Davidson teach the same field as a system including the transformation between one pair of images (i.e. maps), it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ performing a least-square fit as taught by Davidson to the system of Fujita in order to provide an apparatus and method for determining points in a three-dimensional space, using matching image features and the relative positions of the images (col. 2, lines 22-25).

It is noted that only the teaching of performing a least-square fit being taught by Davidson is used in combining with the system of Fujita to render obvious the claimed limitations.

Applicant has made a piecemeal analysis of the references. Applicant is therefore reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Arguments as raised are moot since all claim limitations relevant to this issue have been addressed accordingly.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Miranda Le
March 1, 2004

GRETA ROBINSON
PRIMARY EXAMINER